

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application.

Listing of Claims:

Claims 1-20 (Canceled)

21. (Currently Amended): A method of establishing call setup in relation to a call between calling and called parties over a Voice over Internet Protocol (VoIP) network, the VoIP network comprising a signaling gateway, a first access switch directly connecting the calling party to the VoIP network, and a second access switch connecting the called party to the VoIP network through the Public Switched Telephone Network (PSTN) and associated Signaling System Seven (SS7) network, the method comprising the steps of:

terminating the call in the first access switch;

issuing a first Signaling Initiation Protocol (SIP) INVITE message from the first access switch to the second access switch, and maintaining session state associated with the call in at least one of the first and second access switches, wherein the session state includes information related to a nature of a call and information related to control of an activity of a component in a VoIP network ;

after receiving the first INVITE message, sending a second INVITE message from the second access switch to the signaling gateway; and

maintaining transaction state associated with the call setup in the signaling gateway during only the pendency of the call setup transaction, wherein the transaction state includes information related to call set up, call tear down, and a feature invocation.

22. (Original) The method of claim 21, further comprising:
translating SIP messages received in the signaling gateway from the second access switch into SS7 messages and transmitting the SS7 messages to the PSTN, and
translating SS7 messages received in the signaling gateway from the PSTN into SIP messages and transmitting the SIP messages to the VoIP network.

23. (Currently Amended) The method of claim 22, wherein the step of translating SIP messages received in the signaling gateway from the second access switch into SS7 messages and transmitting the SS7 messages to the PSTN further comprises:

forming an IAM (Initial Address Message) message in the signaling gateway in response to the second INVITE message, and transmitting the IAM to the PSTN.

24. (Currently Amended) The method of claim 23, wherein the step of translating SS7 messages received in the signaling gateway from the PSTN into SIP messages and transmitting the SIP messages to the second access switch further comprises:

forming a first 200 OK message in the signaling gateway in response to an ACM ("Address Completion Message") and an ANM ("Answer Message") messages from the PSTN and transmitting the first 200 OK message to the second access switch;

transmitting a second 200 OK messages from the second access switch to the first access switch; and thereafter, and

transmitting an ACK messages from the first access switch to the second access switch.

25. (Original) A method of invoking a call feature during a call from an access device connected to a Voice over Internet Protocol (VoIP) network, the VoIP network comprising an access switch connecting the access device and a signaling gateway, the VoIP network being connected to the Public Switched Telephone

Network (PSTN) and associated Signaling System Seven (SS7) network, and the method comprising the steps of:

- terminating the call in the access switch;
- transmitting a first Signaling Initiation Protocol (SIP) INFO message from the access switch to the signaling gateway via the VoIP network;
- translating the first SIP INFO message into an SS7 compatible INVOKE message;
- transmitting the INVOKE message to a Service Control Point (SCP) via the SS7 network;
- in response to the INVOKE message, transmitting an SS7 RESPONSE message from the SCP to the signaling gateway;
- translating the RESPONSE message into a second SIP INFO message and transmitting the second SIP INFO message from the signaling gateway to the access switch via the VoIP network.

26. (Original) The method of claim 25, further comprising:

- maintaining in the access switch all session state associated with the call; and
- maintaining no session state in the signaling gateway other than transaction state associated with the feature invocation.

27. (Original) The method of claim 26, wherein the signaling gateway maintains the transaction state associated with the feature invocation during only the pendency of the feature invocation transaction.

28. (Currently amended) A signaling gateway adapted for use in a Voice over Internet Protocol (VoIP), the VoIP network being connected to the Public Switched Telephone Network (PSTN), and comprising a plurality of access switches and an IP backbone, wherein the signaling gateway comprises:

- a first port receiving Session Initiation Protocol (SIP) messages from an access switch via the IP backbone;

a SIP parser/generator receiving SIP messages from the first port;
a second port receiving Signaling System Seven (SS7) messages from an SS7 network associated with the PSTN;

a SS7 protocol stack receiving SS7 messages from the second port;

a translator receiving SIP messages from the SIP parser/generator, directly translating the SIP messages into resulting SS7 messages, and transmitting the resulting SS7 messages to the SS7 protocol stack for subsequent transmission to the SS7 network; and

wherein the translator also receives SS7 messages from the SS7 protocol stack, directly translates the SS7 messages into resulting SIP messages, and transmits the resulting SIP messages to the SIP parser/generator for subsequent transmission to the VoIP network.

29. (Original) The signaling gateway of claim 28, further comprising:
a memory maintaining transaction state associated with a SIP transaction message received from the VoIP network, wherein the transaction state is maintained in memory only during the pendency of the transaction.

30. The signaling gateway of claim 28, further comprising:
a memory maintaining transaction state associated with a SS7 transaction message received from the PSTN, wherein the transaction state is maintained in memory only during the pendency of the transaction.

Claims 31-37 (Canceled)